8. Sean is buying a new DVD player and speakers for $315. The store offers him an interest-free payment plan that allows him to pay in monthly installments of $25.

a. How much will Sean still owe after one payment? After two payments? After three payments?

b. Use n to stand for the number of payments and a for the amount still owed. Write an equation for calculating a for any value of n.

c. Use your equation to make a table and a graph showing the relationship between n and a.

d. As n increases by 1, how does a change? How is this change shown in the table? How is it shown on the graph?

e. How many payments will Sean have to make in all? How is this shown in the table? How is this shown on the graph?

For Exercises 9–12, express each rule as an equation. Use single letters to stand for the variables. Identify what each letter represents.

9. The area of a rectangle is its length multiplied by its width.

10. The number of hot dogs needed for the picnic is two for each student.

11. The amount of material needed to make the curtains is 4 square yards per window.

12. Taxi fare is $2.00 plus $1.10 per mile.

13. The sales tax in a state is 8%. Write an equation for the amount of tax t on an item that costs p dollars.

14. An airplane is traveling at 550 miles per hour. Write an equation for the distance d the plane travels in h hours.

15. Potatoes sell for $0.25 per pound at the produce market. Write an equation for the cost c of p pounds of potatoes.

16. A cellular family phone plan costs $49 per month plus $0.05 per minute of long-distance service. Write an equation for the monthly bill b when m minutes of long-distance service are used.